



AMENDMENTS TO THE CLAIMS

Please cancel claims 39 and 40 without prejudice or disclaimer.

Please amend claims 1, 6, 19, 29-30, and 35 as follows.

1. (Currently amended) A solid catalyst component for the polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, comprising Mg, Ti, halogen and an electron donor selected from succinates of formula (I):

$$\begin{array}{c|c}
R_3 & \parallel \\
R_4 & C & C \\
R_5 & C & C \\
R_6 & \parallel & C
\end{array}$$
(I)

wherein the radicals R_1 and R_2 , equal to or different from each other, are a C_1 - C_{20} linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl or alkylaryl group, optionally containing heteroatoms; the radicals R_3 to R_6 equal to or different from each other, are hydrogen or a C_1 - C_{20} linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl or alkylaryl group, optionally containing heteroatoms, and the radicals R_3 to R_6 which are joined to the same carbon atom can be linked together to form a cycle; with the proviso that when R_3 to R_5 are contemporaneously hydrogen, R_6 is a radical selected from the group consisting of primary branched, secondary and tertiary alkyl groups, cycloalkyl, aryl, arylalkyl and alkylaryl groups having from 3 to 20 carbon atoms.

- 2. (Previously Amended) The catalyst component according to claim 1 in which the electron donor of formula (I) is selected from those in which R_1 and R_2 are C_1 - C_8 alkyl, cycloalkyl, aryl, arylalkyl or alkylaryl groups.
- 3. (Previously amended) The catalyst component according to claim 2 in which R_1 and R_2 are selected from the group consisting of primary alkyls.
- 4. (Previously amended) The catalyst component according to claim 1 in which the electron donor of formula (I) is selected from those in which R₃ to R₅ are hydrogen and R₆ is a branched alkyl, cycloalkyl, aryl, arylalkyl or alkylaryl radical having from 3 to 10 carbon

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atoms.

- 5. (Previously amended) The catalyst component according to claim 4 in which R_6 is a branched primary alkyl group or a cycloalkyl group having from 3 to 10 carbon atoms.
- 6. (Currently amended) The catalyst component according to claim 1 in which the electron donor of formula (I) is selected from those in which at least two radicals from R₃ to R₆ are different from hydrogen and are selected from the group consisting of C₁-C₂₀ linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl and alkylaryl groups optionally containing heteroatoms.
- 7. (Previously amended) The catalyst component according to claim 6 in which the two radicals different from hydrogen are linked to the same carbon atom.
- 8. (Previously amended) The catalyst component according to claim 6 in which the two radicals different from hydrogen are linked to different carbon atoms.
- 9. (Previously amended) The catalyst component according to claim 8 in which the succinate of formula (I) is selected from the group consisting of diethyl 2,3-diisopropylsuccinate, diisobutyl 2,3-diisopropylsuccinate, diethyl 2,3-diisopropylsuccinate, diethyl 2,3-dicyclohexyl-2-methylsuccinate, diisobutyl 2,3-dicyclohexyl-2-methylsuccinate, diisobutyl 2,2-dimethylsuccinate, diethyl 2,2-dimethylsuccinate, diethyl 2-ethyl-2-methylsuccinate, diethyl 2-(cyclohexylmethyl)-3-ethyl-3-methylsuccinate, and diisobutyl 2-(cyclohexylmethyl)-3-ethyl-3-methylsuccinate.
- 10. (Previously amended) The catalyst component according to claim 1 in which the succinates are used in the form of pure stereoisomers.
- 11. (Previously amended) The catalyst component according to claim 1 in which the succinates are used in the form of mixtures of enantiomers, or mixture of diastereoisomers and enantiomers.
- 12. (Previously amended) The catalyst component according to claim 9 in which diethyl 2,3-diisopropylsuccinate, diisobutyl 2,3-diisopropylsuccinate and di-n-butyl 2,3-diisopropylsuccinate are used as a pure *rac* or *meso* forms, or as mixtures thereof.
- 13. (Previously amended) The catalyst component according to claim 1 wherein the Ti compound has at least a Ti-halogen bond and wherein the succinate of formula (I) is supported on a Mg dichloride in active form.

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- 14. (Previously amended) The catalyst component according to claim 13 in which the titanium compound is TiCl₄ or TiCl₃.
- 15. (Previously amended) The catalyst component according to claim 1 further comprising an additional electron donor compound in addition to the succinate of formula (I).
- 16. (Previously amended) The catalyst component according to claim 15 in which the additional electron donor compound is selected from the group consisting of ethers, esters of organic mono or bicarboxylic acids and amines.
- 17. (Previously amended) The catalyst component according to claim 16 in which the additional electron donor compound is selected from the group consisting of (i) 1,3-propanediethers of formula (II);

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$$R^{II} \qquad R^{I} \qquad R^{I} \qquad \qquad (II)$$

$$R^{IV} \qquad R^{VI} \qquad \qquad (II)$$

wherein R^{I} , R^{II} , R^{III} , R^{IV} , R^{V} and R^{VI} , equal or different from each other, are hydrogen or hydrocarbon radicals having from 1 to 18 carbon atoms, and R^{VII} and R^{VIII} , equal or different from each other, have the same meaning of R^{I} - R^{VI} except that they cannot be hydrogen; and wherein one or more of the R^{I} - R^{VIIII} groups can be linked to form a cycle and (ii) esters of organic mono or bicarboxylic acids.

- 18. (Previously amended) The catalyst component according to claim 17 in which the additional electron donor compound is selected from the group consisting of phthalates and the 1,3-diethers of formula (II) in which R^{VII} and R^{VIII} are selected from C_1 - C_4 alkyl radicals, R^{III} and R^{IV} form a condensed unsaturated cycle and R^I , R^I , R^V and R^{VII} are hydrogen.
- 19. (Currently amended) A catalyst for the polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, comprising the product of the reaction between:
 - (a) a solid catalyst component for the polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, comprising Mg, Ti, halogen and an electron donor selected from succinates of formula (I):

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$$\begin{array}{c|c}
R_3 & \parallel \\
R_4 & C & O \\
R_5 & C & O \\
R_6 & \parallel & O
\end{array}$$
(I)

wherein the radicals R₁ and R₂, equal to or different from each other, are a C₁-C₂₀ linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl or alkylaryl group, optionally containing heteroatoms; the radicals R₃ to R₆ equal to or different from each other, are hydrogen or a C₁-C₂₀ linear or branched alkyl, alkenyl, cycloalkyl, aryl, aryalkyl or alkylaryl group, optionally containing heteroatoms, and the radicals R3 to R6 which are joined to the same carbon atom can be linked together to form a cycle; with the proviso that when R₃ to R₅ are contemporaneously hydrogen, R₆ is a radical selected from the group consisting of primary branched, secondary and tertiary alkyl groups, cycloalkyl, aryl, aryalkyl and alkylaryl groups having from 3 to 20 carbon atoms;

- (b) an alkylaluminum compound and, optionally,
- (c) one or more external electron donor compounds.
- (Previously amended) The catalyst according to claim 19 in which the alkylaluminum 20. compound (b) is a trialkyl aluminum compound.
- (Previously amended) The catalyst according to claim 20 in which the trialkylaluminum 21. compound is selected from the group consisting of triethylaluminum, triisobutylaluminum, trin-butylaluminum, tri-n-hexylaluminum, and tri-n-octylaluminum.
- (Previously amended) The catalyst according to claim 19 in which the external donor (c) is 22. selected from the 1,3-diethers of the general formula (II):

$$R^{III} \xrightarrow{R^{I}} OR^{VIII}$$

$$R^{IV} \xrightarrow{QR^{VII}} R^{VI}$$

$$R^{V} \xrightarrow{R^{VI}} R^{VI}$$

$$(II)$$

wherein R^I, R^{II}, R^{III}, R^{IV}, R^V and R^{VI}, equal or different from each other, are hydrogen or hydrocarbon radicals having from 1 to 18 carbon atoms, and RVIII and RVIII, equal or different from each other, have the same meaning of RI-RVI except that they cannot be hydrogen; and



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wherein one or more of the R^I-R^{VIII} groups can be linked to form a cycle.

- 23. (Previously amended) The catalyst according to claim 22 in which the 1,3-diethers are selected from those in which R^{VII} and R^{VIII} are selected from C₁-C₄ alkyl radicals, R^{III} and R^{IV} form a condensed unsaturated cycle and R^I, R^{II}, R^V and R^{VI} are hydrogen.
- 24. (Previously amended) The catalyst according to claim 23 in which the diether of formula (II) is 9,9-bis(methoxymethyl)fluorene.
- 25. (Previously amended) The catalyst according to claim 19 in which the external donor (c) is a silicon compound of the formula $R_a^7 R_b^8 Si(OR^9)_c$, wherein a and b are integers from 0 to 2, c is an integer from 1 to 4 and the sum (a+b+c) is 4, and R^7 , R^8 and R^9 are C_1 - C_{18} hydrocarbon groups optionally containing heteroatoms.

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- 26. (Previously amended) The catalyst according to claim 25 in which a is 1, b is 1 and c is 2.
- 27. (Previously amended) The catalyst according to claim 25 in which R⁷ and/or R⁸ are branched alkyl, cycloalkyl or aryl groups with 3-10 carbon atoms optionally containing heteroatoms and R⁹ is a C₁-C₁₀ alkyl group.
- 28. (Previously amended) The catalyst according to claim 25 in which a is 0, c is 3 and R⁸ is a branched alkyl or cycloalkyl group and R⁹ is methyl.

(Currently amended) A catalyst for the polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, comprising the product of the reaction between:

- (i) a solid catalyst component comprising Mg, Ti, halogen and an internal electron donor (d);
- (ii) an alkylaluminum compound and,
- (iii) a succinate of formula (I):

$$\begin{array}{c|c}
R_3 & 0 \\
R_4 & C & O \\
\hline
R_5 & C & O \\
R_6 & 0 & R_1
\end{array}$$
(I)

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wherein the radicals R_1 and R_2 , equal to or different from each other, are a C_1 - C_{20} linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl or alkylaryl group, optionally containing heteroatoms; the radicals R_3 to R_6 equal to or different from each other, are hydrogen or a C_1 -



C₂₀ linear or branched alkyl, alkenyl, cycloalkyl, aryl, aryalkyl or alkylaryl group, optionally containing heteroatoms, and the radicals R₃ to R₆ which are joined to the same carbon atom can be linked together to form a cycle; with the proviso that when R₃ to R₅ are contemporaneously hydrogen, R₆ is a radical selected from the group consisting of primary branched, secondary and tertiary alkyl groups, cycloalkyl, aryl, aryalkyl and alkylaryl groups having from 3 to 20 carbon atoms.

(Currently amended) The catalyst according to claim 29 in which the succinate of formula (I) is selected from those in which at least two radicals from R₃ to R₆ are different from hydrogen and are selected from C_1 - C_{20} linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl or alkylaryl groups optionally containing heteroatoms.

(Previously amended) The catalyst according to claim 30 in which the two radicals different from hydrogen are linked to different carbon atoms.

(Previously amended) The catalyst according to claim 29 in which the internal donor (d) is selected from the group consisting of ethers, esters of organic mono or bicarboxylic acids and amines.

(Previously amended) The catalyst according to claim 32 in which the internal donor (d) is amines.

selected from the group consisting of (i) 1,3-propanediethers of formula (II):

$$\begin{array}{c|c}
R^{II} & R^{I} \\
R^{III} & OR^{VIII} \\
R^{IV} & OR^{VII}
\end{array}$$
(II)

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wherein R^I , R^{II} , R^{IV} , R^V and R^{VI} , equal or different from each other, are hydrogen or hydrocarbon radicals having from 1 to 18 carbon atoms, and RVIII and RVIII, equal or different from each other, have the same meaning of RI-RVI except that they cannot be hydrogen; one or more of the RI-RVIII groups can be linked to form a cycle and (ii) esters of organic mono or bicarboxylic acids.

(Previously amended) The catalyst according to claim 33 in which the internal donor (d) is selected from the group consisting of phthalates and the 1,3-diethers of formula (II) in which R^{VII} and R^{VIII} are selected from C_1 - C_4 alkyl radicals, R^{III} and R^{IV} form a condensed unsaturated cycle and R^{I} , R^{II} , R^{V} and R^{VI} are hydrogen.

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(Currently amended) A prepolymerized catalyst component for the polymerization of olefins CH₂=CHR, wherein R is hydrogen or a C₁-C₁₂ alkyl group, wherein the prepolymerized catalyst component comprises a solid for the polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, comprising Mg, Ti, halogen and an electron donor selected from succinates of formula (I):

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$$\begin{array}{c|cccc}
R_3 & \parallel & & \\
R_4 & C & O & R_2 & (I) \\
\hline
R_5 & C & C & R_1 & \\
\hline
R_6 & \parallel & O & R_1
\end{array}$$

wherein the radicals R₁ and R₂, equal to or different from each other, are a C₁-C₂₀ linear or branched alkyl, alkenyl, cycloalkyl, aryl, arylalkyl or alkylaryl group, optionally containing heteroatoms; the radicals R₃ to R₆ equal to or different from each other, are hydrogen or a C₁-C₂₀ linear or branched alkyl, alkenyl, cycloalkyl, aryl, aryalkyl or alkylaryl group, optionally containing heteroatoms, and the radicals R₃ to R₆ which are joined to the same carbon atom can be linked together to form a cycle; with the proviso that when R₃ to R₅ are contemporaneously hydrogen, R₆ is a radical selected from the group consisting of primary branched, secondary and tertiary alkyl groups, cycloalkyl, aryl, aryalkyl and alkylaryl groups having from 3 to 20 carbon atoms and which solid for the polymerization of olefins CH₂=CHR has been prepolymerized with an olefin to such an extent that the amount of the olefin pre-polymer is from 0.2 to 500 g per g of solid catalyst component. (Previously amended) The prepolymerized catalyst according to claim 3 in which the solid catalyst component has been prepolymerized with ethylene or propylene.

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(Previously amended) A process for the (co)polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, carried out in the presence of the

catalyst of claim 19.

(Previously amended) The process according to claim 37 in which the olefin to be
(co)polymerized is selected from the group consisting of ethene, propene, 1-butene, 4-methyl-

1-pentene and 1-hexene.

39-40. (cancelled).

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(Previously added) The catalyst according to claim 27 wherein R⁹ is a methyl group.

42. (Previously added) A process for the (co)polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, carried out in the presence of the gatalyst of claim 29.

(Previously added) A process for the (co)polymerization of olefins CH₂=CHR, in which R is hydrogen or a hydrocarbyl radical with 1-12 carbon atoms, carried out in the presence of the catalyst of claim 35.

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